

Maria C. May

Breaking the Code

The New Science of Beginning Reading and Writing

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Introduction

In 1982 Marie Clay gave us *Observing Young Readers*, a brilliant synthesis of the previous twenty years of reading research in developmental psychology along with her own powerful research from careful observation in natural classroom settings. This work along with her other volumes helped pave the way for progress in the next twenty-five years in reading education, underpinning powerful movements such as Reading Recovery, guided reading (Fountas and Pinnell 1996, 2001), comprehensive balanced reading (Routman 2000), and designing research-based programs (Allington 2001). In *Observing Young Readers*, Clay predicted the potential of early writing to complement the early reading program while pointing out that very little had been written about early writing up to that time. She ended *Observing Young Readers* by imploring educators to “go far beyond” her brief review of the developmental aspects of early writing, inviting educators to find the writing/reading connection. Marie Clay was right, as were her eminent reading educator predecessors such as Donald Durrel, whom she quoted “We have known for years the child’s first urge is to write and not to read, we haven’t taken advantage of this fact” (in Graves 1978 quoted in Clay 1982).

This book is my own thirty-year synthesis of what I have learned about the importance of early writing for teaching reading. It stands on the shoulders of many with whom I have worked and others who came before me. It adds to fine ongoing work—good research-based teaching such as Reading Recovery and excellent comprehensive balanced reading—and it responds to the invitation Marie Clay issued over twenty years ago calling for new tools for capitalizing on the reciprocity of early writing and reading. My intent is to help add the missing component that Marie Clay invited educators to search for in 1982, when she had wisdom and foresight to recognize the powerful connection between early writing and learning to read.

There is now a new understanding of the reading process, a new blueprint, and new tools for reading teachers based on the reciprocity of writing and reading and how these systems work together. This book will provide the blueprint for beginning reading and new tools for teaching it. Most importantly, it will show exactly when and what type of instructional intervention is needed in the beginning phases of breaking the code. The new tools and blueprint for teaching beginning readers make it easier to implement the research-based practices

in beginning reading instruction that find support in the most current understandings of the reading process.

I believe one problem in reading education is that even though we have many garden-variety reading teachers working successfully with children who already know how to read, too many of our teachers are not prepared to deal with the exigencies of beginning reading instruction. This book addresses the important differences in beginning and skilled reading and provides special tools for teaching beginners or children who struggle with breaking the code.

I have met many beginning-reading teachers who are frustrated as I would be if I were required to do something like plumbing or dentistry for my living. I don't fully understand how plumbing and dentistry work, and I don't know how to use the tools to get the job done.

Let's think a moment about plumbing. Like reading problems, every plumbing problem is different. I can detect the leak easily enough, but I'm not very good at analyzing the problem and coming up with a solution. Just as the master plumber must understand how the system works, carry along a tool kit with the right tools, and know which tools work best to get the job done, the teacher of beginning reading must have a kit of fine precision tools and be able to pull out the right tool at the right time.

Let me give you an example of a child who was left behind because her teachers had neither a good tool kit nor an understanding of how to use the proper tools at the right time. I began working with a second grade struggling reader whose parents were paying for an expensive tutor at a private summer reading clinic, hoping to give their daughter the boost she needed to read well enough to succeed the following year in third grade. They weren't getting good results. This nine-year-old had not become an accomplished reader who loves books, and the parents and child were distraught. It was the summer before third grade and she was still reading at beginning first-grade level. When I first met her she lacked self-esteem and confidence and she felt defeated because she couldn't read as well as her classmates. I did an assessment and easily discovered her problem—she hadn't broken the complex English alphabetic code or made the move from beginning to skilled reading. If she saw the word *feet*, she called it *foot*. She was very bright and engaging and the main reason she was struggling with reading and fluency was that she had not discovered how English orthography works. She didn't recognize common spelling patterns and sight words—an aspect of code breaking. She was still trying to read words by cueing on beginning and ending letters to sound words out and had no concept of how English letters may be chunked into spelling patterns. If she saw the unknown word, *interesting*, she tried to decode it by attaching a sound to a few prominent letters with no understanding of how to chunk these letters into *in-ter-est-ing*.

Furthermore, she hadn't experienced the volume of reading with appropriate easy books to develop the necessary fluency to become a proficient reader. For over a year she had been "instructed" as if she were a skilled reader in

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materials that were far too difficult for someone who read at her level. The expectations at school were that she be a reader, but with little understanding of how English spelling patterns map to words, she was unable to recognize a large repertoire of words automatically, a prerequisite for skilled and fluent reading. The kind of work she needed was no longer being taught in second grade and the next year could be even worse.

The mother showed me the work that was underway at the summer reading clinic and it was unsettling: the tutor was drilling the child on using context clues. Working on context clues is a great technique for readers who may not be using syntactic cues as a backup for the information one needs to process during reading, but this child's problem was that she saw *feet*, *bat*, and *mail* both in and out of context and said "*foot*," "*but*," and "*meal*," respectively. She didn't automatically process that -eet, -at, and -ail are common chunks of letters in the English spelling system that make it easy to decode *meet*, *beet*, and *feet*; *bat*, *hat*, and *cat*; *nail*, *mail*, and *sail*; or *meetinghouse*, *combaticiveness*, and *unassailable*. The good news is that as a child breaks the alphabetic code, consolidates an understanding of how the code works with the other processes for reading, and has enough reading practice with easy material so that many words and patterns are recognized automatically, the child will combine this decoding ability with her perfectly good phonological, syntactic, and meaning-processing circuitry to read English easily. At the time, however, this child simply hadn't broken the code and her tutor didn't realize it. I could tell what she needed not only by observing her reading but also by looking at her writing. It was right there in front of me. The work to be done that summer should not have focused on context clues—she was already overdependent on them. It should have focused on automatic recognition of common spelling patterns and analogizing—something achieving second graders do easily with the patterns in *meet*, *bat*, and *mail*. The work should have focused on rereading easy and engaging material until these patterns could be read fluently. To read skillfully and fluently (and to write with confidence), this child had to learn to recognize spelling patterns and many one-syllable words automatically (and to produce an abundance of these patterns when she wrote). Along with recognizing the patterns, she had to practice them over and over in fairly easy text until specialized parts of her brain could take over the job of analyzing and recognizing the spelling and word patterns automatically. Then she could get in the flow of reading and the words on the page would sing in her mind like a symphony, harmonizing with the prosody, phonology, and syntax of spoken language into one meaningful voice. She would have become a skilled reader.

After extensive interviews with the child and her parents, I learned that this child's former teachers apparently had too few tools for working with emerging readers and no blueprint for a real understanding of what should be happening as a child advances from nonreading, to beginning reading, to skilled reading. Skilled reading is achieved once the child's brain activates the same critical regions of the brain that you are activating at this very moment. (A *beginning*

reader's brain activation would look different from yours at this moment with fMRI [functional magnetic resonance imaging] because different specialized areas are activated. A *skilled reader* who is reading second-grade-level material would produce a brain scan that probably looks a lot like yours as you are reading this page.)

Regrettably, this particular child had floundered for three years in school—no reading instruction to speak of in kindergarten and two years of misplacement in one-size-fits-all scripted reading programs, lockstep in implementation but out of sync with what *she* needed, through no fault of her own. By the time I first met the child, the summer tutor was awkwardly trying to fix the problem using the wrong tools. She was using a hammer to unscrew the gooseneck from the pipe. Context clues may have had some effect on this reader's processing, just as one might very well bang on the pipe with the hammer a couple of times before attempting to unscrew it, but the real work of unscrewing the pipe should be done with a pipe wrench. The reading tutor just didn't know which tool to use to do the job.

The new tools in this book have been selected based on new understandings of what is needed for children to be successful in learning to read (and write), including brain imagery studies, which are allowing researchers to see what's going on *inside the brain* at the same time teachers observe what goes on *outside the brain* with beginning and struggling readers. More importantly, the tools go far beyond what many teachers currently do to take advantage of writing and reading reciprocity, which Marie Clay predicted we needed over twenty-five years ago. This book is designed to provide a tool kit to help teachers work with confidence and precision. It will show you exactly what tool to use at the right time, what you are trying to accomplish with the tool, and why it's important for the beginning reader. The selection of the tools and the guidelines for using them is predicated by the most up-to-date theories of how learning to read works. We now know what signals to look for when a beginning reader is falling behind, and we know what kind of instructional intervention can help them.

Part of the exciting message of this book is that with the right tools at the right time, most brains can learn to read English, which is harder to read than other alphabetic languages. Even more encouraging is that, with early intervention, brains that initially struggle simply may have a glitch in the reading circuitry in a specialized area of the brain for automatic word reading, and with the tools highlighted in this book, the glitch can be fixed.

In the chapters that follow, I use plain language to show you what the latest theory and research tell us is needed to teach reading successfully. We will follow a plan of assessment-driven instruction, guiding children through four phases of beginning reading by selecting the best tools in each phase for moving them to the next higher level. To assure your success with assessment-driven instruction, I provide a blueprint to enable you to connect teaching writing and spelling with teaching reading in ways that aren't predicated by convention.

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Beginning writing and reading share commonalities that haven't been highlighted in teacher training or the teaching-reading literature. Many well-trained, veteran reading teachers who read this book will see the spelling/writing/reading connection explicated clearly for the very first time. You'll learn why highlighting the spelling component not only makes sense for emerging readers but also revolutionizes assessment-based instruction. We will highlight early writing and reading reciprocity and show how kindergarten writing is a means for ensuring reading success. Emerging readers who are guided through phases of writing using invented spelling can use their writing knowledge for learning to read because both systems share the same underlying knowledge base. Early writers use knowledge about sounds, letters, syllables, words, word parts like onsets and rimes, and phonics patterns, so early writing *advances* reading. But we haven't taken full advantage of it. Too often early reading and writing are not connected; they are treated separately. Teachers are doing things with phonemic awareness, not understanding when certain phonemic awareness work is needed or how it fits in the whole process of becoming a reader. Phonemic awareness has become an isolated objective, not a part of the natural development of early reading, spelling, and writing. Regrettably, writing and spelling are not even taught in some kindergarten classrooms. Very specific techniques used concomitantly for teaching beginning reading and writing at particular phases in early development greatly assist the child's move toward the goal of skilled reading. Many teachers still do not realize that beginning reading and writing are almost the same thing, identical processes unfolding in four identical phases in what for some children is a two-year journey in kindergarten and first grade on the road to skilled reading—a two-year journey to breaking the code.

While beginning reading and writing phases are identical, assessing writing phases has a value-added component: writing phases are easier to detect. It is often easier to nudge children forward in literacy development teaching into their writing than focusing only on guided reading instruction or separate phonemic awareness instruction. Working with beginning writing is like fixing the drainpipe under the sink and all of a sudden the dishwasher works because, like the sink and the dishwasher, reading and writing are hooked up to the same system. And while things unrelated to drain pipes can go wrong with the dishwasher, it makes sense to check out the basic systems first.

A huge advantage of tracking the writing phases instead of relying solely on reading levels is that writing is right there on the paper, marvelously explicit and easier to see than the reading phases. That's important because assessment-driven instruction based on the reciprocity of beginning writing and reading not only makes the work of the reading teacher a lot easier, it allows you to add a few precision power tools to your toolbox to replace some of the crude instruments you may have used in the past.

The research base in this book provides new understanding of what it takes for a child to become a reader by focusing on differences between *beginning* reading and *skilled* reading. You'll find a contemporary model for reading

and a synthesis of phase theory of sight-word reading and stages of developmental spelling remarkably corroborated by brain scan research to support a newfound emphasis on the spelling/writing/reading connection during this important time in development. You'll see how all three sciences point to the same fact: the child becomes a skilled reader after a protracted process of breaking the letter code.

A major goal of this book is to expand our understanding of what it means to "break the code" by clearly mapping out the important role of the spelling/writing/reading connection for beginning reading. Deciphering the English spelling system and understanding how the printed symbols of the alphabet—namely, letters or chunks of letter combinations and patterns—combine to represent comprehensible, meaningful, pronounceable words and subword parts, are at the fulcrum of beginning reading (and writing). *Once this chunking breakthrough is accomplished, the brain can activate circuitry for recognizing words automatically and read with much more proficiency, precision, and independence.* (We will see that early independent reading, which is much more dependent on repetition and memorization of easy material, may be an entirely different process and activate different brain circuitry than later skilled independent reading.) It may surprise you that it normally takes some children two years to break the code. (And too many never really break it!)

Chapter 1 surveys a model of reading many psychologists believe to be the best current psychological perspective on how reading works. Whether you think it's the best model or not, it's one worth thinking about because it does provide new perspectives on beginning reading. After surveying the model I provide my own five propositions to help rethink the requirements of teaching beginning reading, which may lead one to retool by taking advantage of writing and reading reciprocity.

Chapter 2 leads us inside the brain to reveal stunning new findings from brain scan research and the neurobiology of reading. You'll find evidence of two separate pathways for reading that define beginning versus skilled reading. You'll better understand the critical role spelling plays in the beginning reading and beginning writing process, and why studies show that writing is "the context in which word analysis most often took place, typically as using phonological analysis in the service of 'figuring out' the spelling of words" (reported in Snow, Burns, and Griffin 1998, 187). We'll also see why spelling instruction may play a role in overcoming some reading disabilities.

Chapter 3 presents a new perspective from which to retool assessment-driven instruction, adding assessment of a child's advancement in "figuring out" words or breaking the code from no letter use, to pre-alphabetic, partial alphabetic, full alphabetic and consolidated alphabetic levels of beginning reading and writing to support and foster the child's reading efforts. Looking from outside the brain, we'll see differences in early phases versus eventual skilled and automatic reading. At each phase we will be learning specific strategies to establish and stabilize the level of word analysis the child is capable of and then

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move them to the next level. We'll see how observations by phase theorists for word learning and developmental spelling research outside the brain corroborate what neuroscientists see happening inside the brain. In Chapter 3, we focus on research in the development of phase theory for sight-word learning and begin to lay the foundation for both an instructional and an intervention blueprint.

In Chapter 4, the blueprint becomes more tangible by showing the child's advancement through clearly apparent phases of writing and spelling development. You will learn that the writing phases and the reading phases are directly connected, and so provide a clear research base for reading and writing reciprocity. Taken together, findings in these two chapters lead to a clearer understanding of what happens in the brain to allow for skilled and automatic reading and spotlight early intervention as a key to successful reading instruction.

Chapter 5 begins by showing how children are prepared for success with literacy before entering kindergarten. You will learn why it's important to capitalize on the child's first urge to write. You'll find a discussion of the reading wars and an attempt to stretch our understanding and perhaps bring two warring camps closer together in ideology by highlighting reading and writing reciprocity. We begin to look at how and why to intervene during the early phases of beginning literacy.

Chapter 6 is a blueprint for intervention—essentially the when, why, and how to intervene with beginning readers and writers who are straying off course. Capitalizing on reading and writing reciprocity and the compelling writing connection to reading, the easy intervention procedures needed during the "tadpole" phases of beginning literacy are clearly presented. Beginning with a mission statement and a set of values that all teachers of beginning and struggling reading will be eager to embrace, the Intervention Blueprint will help delineate each of the phases of development and show when and how to intervene with the right kind of instruction at the right time. You'll learn to use a new set of tools to build what is needed and to fix what goes wrong. And in so doing, you'll discover a powerful new paradigm for ensuring that all beginners and struggling readers break the code and read automatically.

Chapters 6 and 7 are the centerpiece of this book. If you are short on time, you may go directly to Chapters 6 and 7 for detailed information on when and how to intervene and instruct beginners, as well as dozens of specific strategies for supporting developing readers and writers. You'll see the tools in action moving the child level by level toward breaking the code. You'll glean nuances that will sharpen your observation and instructional skills, enabling you to guide beginners and those who struggle toward successful code breaking. You'll see how instruction can be crafted to be individualized, age-appropriate, and engaging at all levels and you'll learn how to be a responder to a child's specific needs for breaking the code.

Chapter 8 shows how to set up a kindergarten writing program that is as important for learning to read as reading instruction itself. You'll hear the voices

of the best kindergarten teachers in the nation as they invite you into their classrooms to visit powerful learning environments for literacy learning and to see how to teach reading through writing. They'll share their favorite literacy techniques and strategies. The chapter includes schedules that show times for teaching writing explicitly and also times for creating play-based instruction to increase not only oral language but written language as well.

In Chapter 9 you will journey deep into the dark side of reading disability. In a case study of a struggling reader and explications of the cases of three children with probable neurologically based reading and spelling disabilities, you will see how missteps in reading instruction, a lack of early intervention, and bad advice can be devastating, not only to children but to the adults who surround them.

Finally, Chapter 10 is an amazing story of one recovered reader; and in a Postscript you'll learn how the work you do leaves a legacy.

I hope to take you on a remarkable journey deep into the world of teaching beginning readers and writers—we may go farther than you can imagine. If you are a reading teacher, our journey may change your teaching.